

REMARKS

I. Introduction

Claims 1, 3-14 and 16-25 have been examined and rejected. Upon entry of this amendment, Claims 1, 4 and 5 will have been amended and Claims 2 and 3 will have been canceled. Applicants respectfully submit that pending Claims 1, 4-14, and 16-25 are now in condition for allowance and request continued examination and reconsideration of the rejections set forth in the Office Action.

II. Response to Rejections

A. Rejections under 35 U.S.C. § 103

1. Rejection of Claims 1, 4, 7-14 and 18-25

Claims 1, 4, 7-14, and 18-25 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Ogasawra U.S. Patent No. 6,512,919 ("Ogasawra") in view of Lev et al. U.S. Patent Publication No. 2002/0102966 ("Lev"). With respect to Claims 1, 4, 11-14, and 22-25, the Examiner stated that Ogasawara discloses:

"a system for decoding and analyzing a barcode comprising: at least one machine readable barcode; at least one mobile device equipped with a digital camera for imaging said barcode, wherein said mobile device decodes the barcode information from said barcode image; a wireless network; and a server for receiving and processing said barcode information via said wireless network, wherein said server transmits media content to said mobile device after processing said barcode information."
(p. 2-3)

The Examiner makes specific references to Fig. 1; Col. 18, ll. 11-22; Col. 22, ll.40-68; Col. 6, ll. 42-52; and Col. 18, ll. 22+.

Applicant points out that the summary of Ogasawra above is different for the summary provided by the Examiner in the March 11, 2005. In the previous Office Action, the Examiner summarized Ogasawra as follows:

"a wireless videophone with an integral digital camera enabling a shopper to scan, recognize, and decode capture bar or icon code images of

purchased items, and pattern recognition software translates the barcode image data into an alpha-numeric product identification. A commercial telephone network facilitates connection of the store server to a wireless telephone via a cellular telephone network, and transmits the video graphic image of the numeric, alphanumeric or barcode identifier to a server for recognition processing. Processing results are then transmitted back to the customer's wireless videophone for display to the customer.”
(p. 3-4)

In the previous Office Action, the Examiner stated that Ogasawra mainly teaches server-side decoding, and not decoding on the mobile device itself. This stands in sharp contrast to the Examiner's summary of Ogasawra in the present Office Action wherein the Examiner says that Ogasawra teaches decoding on the mobile device itself. It should be obvious from a reading of Ogasawra that the Examiner's original interpretation was correct and that this interpretation, from the March 11, 2005 Office Action, should be used in the present Office Action also, as the last interpretation has no support in the specifications or the claims from Ogasawra. Following the March 11 Office Action Applicants have amended their claims to specifically state that all of the decoding and enhancing occurs on the mobile device itself.

Indeed, Ogasawra solely, scarcely, in one single sentence, and no specificity, mentions that the decoding may also be done directly on the phone, but he does not provide any method of enablement. Applicants, provide a method of enablement for decoding barcodes utilizing the low-quality imager present in most camera phone and many other similar devices. It is therefore, respectfully submitted, that Ogasawra cannot for the basis for rejecting Applicants' invention.

2. Lev et al. U.S. Patent Publication No. 2002/0102966

The Examiner then states that Ogasawra does not explicitly disclose barcode image enhancing steps as recited in Claim 14. However, the Examiner states that Lev et al. discloses:

“An object identification method for wireless portable devices for a user equipped with a portable wireless imaging device to be able to obtain information and services related to imaged objects, where the

object identification is performed at least partially by a remote computational facility, and where the object identification is based on acquired images of the object. The method includes an imaging device, capable of taking one-dimensional or two dimensional images of objects; a device capable of sending the coded image through a wireless channel to remote facilities; algorithms and software for processing and analyzing the images and for extracting from them symbolic information such as digits, letters, text, symbols or icons; algorithms and software facilitating the identification of the imaged objects based on the information gathered from the image and the information available in databases; and algorithms and software for offering various information or services to the user of the imaging device based on the information gathered from the image and the information available in databases.” (p. 3)

Applicants have highlight a passages in the Examiner’s summary which states that the decoding of the barcode does not occur directly on the mobile phone, but rather on a remote server as in Ogasawra. Again, Applicants state that decoding on a mobile device is vastly different from decoding on a remote server. First, using Applicants’ invention, the barcode image does not need to be sent to a remote server which may take a long period of time. By performing the decoding directly on the phone, Applicants’ invention can decode the barcode much more quickly because data transfer times do not have to be taken into account. Additionally, decoding directly on the mobile device allows a user to decode a barcode in the absence of a wireless network, which is something not possible using Ogasawra, Lev, or any combination thereof.

Like Ogasawra, Lev suffers from the same deficiency, and although it scarcely mentions that the decoding may also be done directly on the phone, it does not provide any method of enablement. Merely mentioning that something is possible in a patent specification does not imply that doing so is “prior art,” as the Examiner has claimed.

Applicants, provide a method of enablement for decoding barcodes utilizing the low-quality imager present in most camera phone and many other similar devices. It is therefore, respectfully submitted, that Lev cannot for the basis for rejecting Applicants’ invention.

3. Combination of Ogasawra and Lev cannot form the basis for rejecting Applicants' claims

The Examiner argues that it would be obvious to an artisan of ordinary skill in the art at the time the invention was made to “further employ algorithms and software for enhancing barcode images in addition to the system of Ogasawra due to the fact that more improved barcode images can be achieved for the purposes of enhancing readability of images taken by a wireless and portable device.”

As Applicants have already argued, both Ogasawra and Lev individually, and in combination, only teach decoding by sending the picture of the barcode to a remote server. Lev does disclose performing additional enhancement to the image before decoding, but the decoding still takes place on the remote server.

Applicants argue that decoding a barcode image on a server is much simpler than decoding images on a mobile device due to the limited processing power and limited memory of the mobile device. Applicants' invention teaches a method for decoding a barcode image which is generally more efficient and economically more viable, as sending a picture through a wireless network is expensive, than that described in either Ogasawra or Lev because the barcode does not have to be transmitted to a remote server for decoding. In addition, Applicants teach performing specific steps for enhancing the barcode image on the mobile device itself which is something only briefly alluded to in Lev.

4. Rejection of Claims 5 and 16

With respect to Claims 5 and 16, the Examiner rejected them under 35 U.S.C. 103(a) as being unpatentable over Ogasawra as modified by Lev as applied to Claims 1 and 14, and further in view of Chiu U.S. Patent Application No. 2002/0084330 (“Chiu”). The Examiner further argues that Chiu discloses the steps of decoding a barcode by “obtaining edge points from the image, recognizing the symbology of the barcode, counting and comparing the edge points to a predefined threshold value, and decoding the data characters in the barcode.”

5. Rejection of Applicant's Invention Further in View of Chiu is groundless

The rejection under Chiu is essentially the same as was stated in the previous Office Action. However, Applicants still believe that the method of enablement disclosed by Chiu is limited and very different from the one disclosed by Applicants. For example, Chiu does not disclose the step of “comparing the edge points to a predefined threshold value.” Chiu discloses first computing the precise widths between the high contrast edges (step 170, FIG. 1) and then decoding this ordered list of widths according to various symbology libraries. In contrast, Applicants do not usually perform the step of computing the precise widths as this step is unnecessary for many barcodes. Applicants only utilize the number of edges to determine if a barcode is from a certain symbology. For example, if the number of edges is greater than 25, the barcode may be a UPC-A barcode. Applicants’ invention would then calculate the widths and attempt to decode the barcode. However, if the number of edges had been less than 25, Applicants’ invention would not attempt to decode the image according to any symbology which has more than 25 edges.

Chiu also does not disclose the step of loading a first symbology library in the process of decoding a barcode from an image. Applicants believe that this is a novel step because it allows different types of barcodes to be loaded and makes the decoding more customizable. For example, if someone utilizing the present invention was only decoding UPC-A barcodes, then this would be the only symbology library loaded. However, if UPC-E barcodes were also being decoded, this symbology library could easily replace the UPC-A symbology library. Decreasing the amount of libraries allows for faster processing, especially on devices with limited processing power and small internal storage space.

6. Combination of Ogasawra, Lev, and Chiu is insufficient to reject Applicants’ claims

The Examiner states that it would have been obvious to employ the decoding steps of a barcode as taught by Chiu into the teachings of Ogasawra and Lev in order to provide a method for decoding barcodes comprising “recording the image, obtaining edge points, recognizing symbology, counting and comparing the edge points to a threshold value, and decoding the data characters for detecting and recognizing barcode images.”

Applicants have already pointed out that the combination of these references does not disclose Applicants' invention since Ogasawara and Lev do not disclose barcode decoding on the device, and Chiu does not disclose the steps of "comparing the edge points to a predefined threshold value" and "loading a first symbology library in the process of decoding a barcode from an image." These steps are recited in Claims 5 and 16 and are not disclosed by Chiu. Therefore, the combination of Ogasawara, Lev and Chiu does not disclose each and every step described in Applicants' invention.

In view of these arguments, Applicants believe that Claims 5 and 16 are allowable in view of the prior art.

7. Rejection of Claims 6 and 17

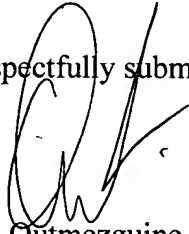
With respect to Claim 6 and 17, the Examiner rejected the claim as being unpatentable over Ogasawara, Lev, and Chiu, in further view of Brandt et al. U.S. Patent No. 6,585,157 ("Brandt"). The Examiner first states that "none of the above fails to teach that a plurality of other symbology libraries are loaded by said mobile device if said number of edges is less than said predetermined threshold." The Examiner then states that Brandt discloses "that if the edge strength of the elements in the potential quiet zone were below some threshold, the other factors could be considered to determine if this was a valid quiet zone, which is required for decoding a particular symbology."

As previously argued in the last Office Action, Applicants do not calculate the "edge strength" or any similar item and compare it to a threshold value. Claim 6 is directed at comparing the number of edges found in a particular barcode image to a threshold, and not the apparent edge strength of a single edge. The number of edges is the number of elements which are detected in the barcode image. In contrast, the "edge strength" is a value calculated by the invention of Brandt which is specific to his invention. Applicants believe that the two comparisons are distinctly different because what is being compared is different. Therefore, Applicants believe that the determination made in Brandt has no application to Applicants' invention and that the rejection should be withdrawn.

III. Conclusion

In view of the above amendments, arguments and papers filed herewith, it is respectfully submitted that the rejections should be withdrawn. The Application is now believed to be in a condition for allowance, which is earnestly solicited.

Respectfully submitted,


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